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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,209	08/07/2001	Sarath D. Gunapala	06618-379002	1843

7590 12/09/2003

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EXAMINER

BAUMEISTER, BRADLEY W

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Advisory Action	Application No. 09/924,209	Applicant(s) GUNAPALA ET AL.	
	Examiner Bradley W Baumeister	Art Unit 2815	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☐ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on 26 November 2003. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☐ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attachment.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

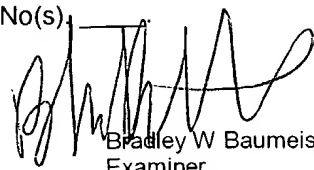
Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: 1-11.

Claim(s) withdrawn from consideration: _____

8. ☐ The drawing correction filed on 12 May 2003 is a) ☐ approved or b) ☒ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
10. ☐ Other: _____


 Bradley W Baumeister
 Examiner
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Response to Arguments

1. Applicant's arguments filed 11/26/2003 have been fully considered but they are not persuasive.

a. Specification Objection: Applicant has not responded to the specification objection appearing in the Office action dated 7/25/2003 (paper #13, paragraph 1).

b. Drawing Objections:

i. As an initial matter, Applicant points out that formal drawings were submitted with the response dated April 30, 2003. However, the Examiner has never asserted that the formal drawings were not received. Rather, the Examiner acknowledged that formal drawings were received, but pointed out in footnote 1 (paper #13) that no additional marked-up copy of the drawings was received.

ii. Turning to the drawing rejections, themselves, applicant now urges that the previously unlabeled white serpentine region alternatively represents the electric field distribution in that region rather than the physical embodiment of the contact layer 116 although the contact layer 116 is located in that area. This argument is not persuasive because every other portion of FIG 3 depicts a physical structure as opposed to an energy of field distribution data; and Applicant expressly states that, "FIG 3 shows a structure of a 1-dimensional array of quantum-well columns. Fig. 4 shows the calculated magnitude of the coupled radiation with its electric field (E_z)... [and] FIGS. 5 and 6 respectively show the calculated electric field (E_z)..." (e.g.,

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specification, page 6, lines 24-30). Restated, Applicant states that it is FIGs 4-6--not FIG 3--which show the calculated electric field (Ez). The examiner provisionally interprets the unlabeled dashed line of FIGs 4 and 5 to be intended to represent the calculated electric field (Ez), although contrary to Applicant's statement in the specification, FIG. 6 does not depict any dashed lines, so it is still unclear what particular feature is intended to depict these electric fields.

iii. Also, Applicant's conclusory statement--that "the contact layer 116 is located in that area"--does not sufficiently explain in what portion of the serpentine area the contact layer 116 is located, and do not sufficiently explain where the contact region 116 is supposed to exist. Restated, Applicant's comments do not clarify the meaning of the white serpentine area. The Examiner questions whether the gap 120 if FIG 3 was, in fact, intended to extend further downward to contact with the gold layer, with the remaining white portion intended to depict the contact region 116.

c. Merits

i. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

ii. Applicant further argues (page 2, last paragraph) that each quantum well (QW) structure in the columnar shape is to operate "to absorb radiation polarized perpendicularly to said quantum well layers. In contrast, each cavity shown in FIGs 5-8 [of Choi] does not have

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the quantum well layers and thus does not absorb light,” that the opposing parallel sidewalls perpendicular to the substrate in each QW structure form an optical cavity therebetween (within the QW stack) (page 3, first full paragraph); and that “the cavities in Choi...are hollow and do not have any quantum well layers (page 3, second full paragraph).”

These arguments are not persuasive because it was not, and is not, the Examiner’s position that the cavities 251 of Choi constitute the “semiconductor optical cavity.” Rather, the Examiner’s position was, and is, that the presence of the slits or cavities 251 produces an “optical cavity” within the semiconductor quantum well stacks S itself (e.g., FIG 5), in the same manner in which optical cavities are formed in Applicant’s invention. Restated, the only difference between the invention of Choi and the present invention as set forth in the cited claims is that in the present invention, the stacks are “isolated” or “fully isolated”, whereas Choi discloses partially isolated stacks.

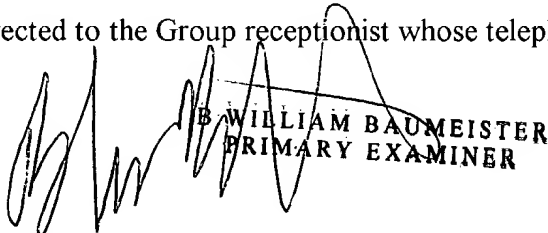
Applicant asserts that the Choi and Chen devices use fundamentally different optical mechanisms to change the polarization of input light with normal incidence, but this is not so. All QWIPs—including those of Choi and Chen--function by absorbing light that has a polarization direction that is perpendicular to the quantum well (see e.g., Applicant’s specification in the Background section, page 2, line 2). In fact, the slotted QWIPs (or QGIPs) of Choi and Chen function by the same physics principles. The primary differences between the two teachings are the straight (Choi) vs slanted (Chen) sidewalls and the partially isolated (Choi) vs fully isolated (Chen) stacks. The rejections then went on to explain how and why the teachings of Choi and

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Chen are combinable and why such combinations render the claims obvious. Thus, the rejections are still deemed to be proper and are therefore maintained.

INFORMATION ON HOW TO CONTACT THE USPTO

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, **B. William Baumeister**, at **(703) 306-9165**. The examiner can normally be reached Monday through Friday, 8:30 a.m. to 5:00 p.m. If the Examiner is not available, the Examiner's supervisor, Mr. Tom Thomas, can be reached at (703) 308-2772. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



B. WILLIAM BAUMEISTER
PRIMARY EXAMINER

B. William Baumeister

Primary Examiner, Art Unit 2815

December 8, 2003